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Hitachi Compute Blade CB2000 / CB320 10Gb 2-port LAN Adapter User's Manual

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Hitachi Data Systems

MK-99COM035-03

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Preface

This document describes how to use the Hitachi Compute Blade CB2000 / CB320 10Gb 2-port LAN adapter such as installation, connection, and handling.

This preface includes the following information:

- ☐ Intended Audience
- ☐ Release Notes
- ☐ Referenced Documents
- ☐ Document Conventions
- ☐ Convention for storage capacity values
- ☐ Getting Help
- ☐ Comments

Notice: The use of Hitachi Compute Blade CB2000 / CB320 10Gb 2-port LAN adapter and all other Hitachi Data Systems products is governed by the terms of your agreement(s) with Hitachi Data Systems.

Intended Audience

This document is intended for personnel involved in planning, managing, and performing the
tasks to prepare your site for Compute Blade installation.
This document assumes the following:

. The reader has a background in hardware installation of computer systems.
. The reader is familiar with the location where the Compute Blade will be installed, including knowledge of physical characteristics, power systems and specifications, and environmental specifications.

Release Notes

Read the release notes before installing and using this product. They may contain requirements or restrictions that are not fully described in this document or updates or corrections to this document.

Referenced Documents

Hitachi Compute Blade documents:

- Hitachi Compute Blade 2000 SOFTWARE GUIDE
- Hitachi Compute Blade 320 SOFTWARE GUIDE

Document Conventions

This document uses the following typographic conventions:

Convention	Description
Regular text bold	In text: keyboard key, parameter name, property name, hardware labels, hardware button, hardware switch. In a procedure: user interface item
Italic	Variable, emphasis, reference to document title, called-out term
`Screen text`	Command name and option, drive name, file name, folder name, directory name, code, file content, system and application output, user input
< > (angled brackets)	Variable (used when italic is not enough to identify variable).
[ ] (square bracket)	Optional values
{ } braces	Required or expected value
| vertical bar	Choice between two or more options or arguments
_(underline)	Default value, for example, [a | b]

This document uses the following icons to draw attention to information:

Icon	Meaning	Description
	WARNING	This indicates the presence of a potential risk that might cause death or severe injury.
	CAUTION	This indicates the presence of a potential risk that might cause relatively mild or moderate injury.
NOTICE	NOTICE	This indicates the presence of a potential risk that might cause severe damage to the equipment and/or damage to surrounding properties.
	Note	This indicates notes not directly related to injury or severe damage to equipment.
	Tip	This indicates advice on how to make the best use of the equipment.

Convention for storage capacity values

Physical storage capacity values (for example, disk drive capacity) are calculated based on the following values:

Physical capacity unit	Value
1 kilobyte (KB)	1,000 (10^3) bytes
1 megabyte (MB)	1,000 KB or $1{,}000^2$ bytes
1 gigabyte (GB)	1,000 MB or $1{,}000^3$ bytes
1 terabyte (TB)	1,000 GB or $1{,}000^4$ bytes
1 petabyte (PB)	1,000 TB or $1{,}000^5$ bytes
1 exabyte (EB)	1,000 PB or $1{,}000^6$ bytes

Logical storage capacity values (for example, logical device capacity) are calculated based on the following values:

Logical capacity unit	Value
1 block	512 bytes
1 KB	1,024 (2^{10}) bytes
1 MB	1,024 KB or $1{,}024^2$ bytes
1 GB	1,024 MB or $1{,}024^3$ bytes
1 TB	1,024 GB or $1{,}024^4$ bytes
1 PB	1,024 TB or $1{,}024^5$ bytes
1 EB	1,024 PB or $1{,}024^6$ bytes

Getting Help

The Hitachi Data Systems customer support staff is available 24 hours a day, seven days a week. If you need technical support, log on to the Hitachi Data Systems Portal for contact information: https://portal.hds.com

Comments

Please send us your comments on this document: doc.comments@hds.com. Include the document title and number including the revision level (for example, -07), and refer to specific sections and paragraphs whenever possible. All comments become the property of Hitachi Data Systems Corporation.

Thank you!

1

Outline

This chapter contains an outline of the 10Gb 2-port LAN adapter.

- ☐ Features
- ☐ Supported OS
- ☐ Notes
- ☐ Restrictions

Features

This Product is installed in PCI Express (henceforth PCIe) slot of the system device. This product has the following features.

- This Adapter corresponds to 10GBASE-SR (IEEE 802.3ae).

- This Adapter has the network interface connector by two ports.

- This Adapter is connected with multi mode optical fibre cable.

- This Adapter can be put on a PCI Express x8 slot.

Supported OS's

10Gb 2-port LAN adapter can be used on following OS's.

- Windows Server2003 R2
- Windows Server2008
- Windows Server2008 R2
- Windows Server 2012
- Windows Server 2012 R2 (Not supported for CB320)
- Red Hat Enterprise Linux 5.4 or later
- Red Hat Enterprise Linux 6.1 or later
- VMware ESX 4.0 Update 1 or later
- VMware ESX 4.1 Update 1 or later
- VMware ESXi 5.0
- VMware ESXi 5.1
- VMware ESXi 5.5

Notes

■About TCP/IP Checksum Offload function of the 10Gb 2port LAN adapter

This LAN adapter has the TCP/IP protocol checksum calculation function that is executed on LAN controller. When you use 10Gb 2port LAN Adapter, please check if this function is set to Enable as the default setting. When this function is disabled, you may not be able to get the expected performance.

How to check :

Windows Server 2008 / Windows Server 2008 R2

When Intel(R) PROSet is installed;

Open the properties of [Intel(R) Ethernet Server Adapter X520-2] from the device manager, and the turn the check box of the following items on by [Advanced] tab - [TCP/IP Offloading options] tab - [properties].

- "lPv4 Checksum Off-load"
- "TCP Checksum Off-load" (lPv4)
- "TCP Checksum Off-load" (lPv6)
- "UDP Checksum Off-load (lPv4)
- "UDP Checksum Off-load" (lPv6)

Check the setting of the following items under the [Advanced] tab "On".

- "Large Send Offload" (IPv4)
- "Large Send Offload" (IPv6)

When Intel(R) PROSet is not installed;

Open the properties of [Intel(R) Ethernet Server Adapter X520-2] from the device manager, and the setting of the following items under the [Advanced] tab "Rx & Tx Enabled" or "On".

- "lPv4 Checksum Off-load" : "Rx & Tx Enabled"
- "TCP Checksum Off-load" (lPv4) : "Rx & Tx Enabled"
- "TCP Checksum Off-load" (lPv6) : "Rx & Tx Enabled"
- "UDP Checksum Off-load (lPv4) : "Rx & Tx Enabled"
- "UDP Checksum Off-load" (lPv6) : "Rx & Tx Enabled"
- "Large Send Offload" (IPv4) : "On"
- "Large Send Offload" (IPv6) : "On"

Windows Server 2003 R2

When Intel(R) PROSet is installed;

Open the properties of [Intel(R) Ethernet Server Adapter X520-2] from the device manager, and the turn the check box of the following items on by [Detail settings] tab - [TCP/IP Offloading options] tab - [properties].

- "IPv4 checksum offload
- "Offload TCP Segmentation
- "TCP Checksum Offload (IPv4)
- "UDP Checksum Offload (IPv4)

When Intel(R) PROSet is not installed;

Open the property of each LAN adapter from the device manager, and make the setting of the following items under the [Detail settings] tab "Tx & Rx Enabled" or "On".

- "IPv4 checksum offload
- "Offload TCP Segmentation
- "TCP Checksum Offload (IPv4)
- "UDP Checksum Offload (IPv4)

Red Hat Enterprise Linux

Please Execute this command at 10Gb 2port LAN Adapter ports.

#ethtool -k eth*

Please confirm if the output of the above command matches the followings.

■For the Use of PCI express Error Isolation function on Red Hat Enterprise Linux

It is not a problem if the following message is displayed when the PCI express failure occur.

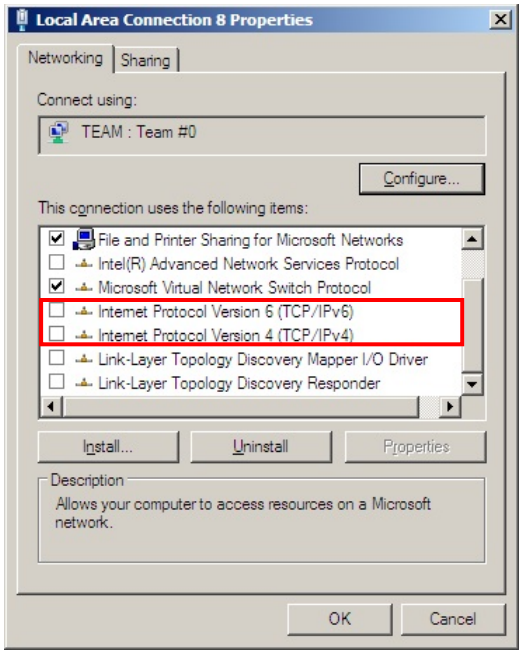
ixgbe: ethX: ixgbe_reset: Hardware Error: -15 (where：ethX is eth0、eth1, etc.)

■For the use of Windows Server 2008 R2 Hyper-V 2.0

If you assign the team which you create as "Virtual Machine Load Balancing(VMLB)" by Intel(R) PROSet to the "Virtual Network" created by the "Virtual Network Manager" of "Hyper-V Manager" as an external Network Adapter, Do not check the boxes for following 2 items.

Internet Protocol Version6 (TCP/IPv6)
Internet Protocol Version4 (TCP/IPv4)

These are in a "Property window" of "Loacl Area Connection" of the team, and the window is displayed by selecting [Control Panel] - [Network and Internet] - [View network status and tasks] - [Change adapter settings] - [Network Connections].



If the above boxes are checked, a blue-screen problem may occur. It results that OS will not start in this case.

■About data transfer performance

Please note that the data transfer performance may vary depending on software setting or hardware environment. Especially, on WIndows 2003 R2, the performance is not enough as compared to other OS

■About Error Logs on system booting

Link-Down messages are occasionally logged in to the System Event Log while the system booting. In such case, please check the LAN devices if they are in link-down status and take the necessary action to recover.

■Packet size setting

Jumbo frame setting is recommended for better network performance.The setting should be set to all devices on the network path.

The setting for 10Gb 2port LAN adapter is as follows.

Windows

Open the properties of [Intel(R) Ethernet Server Adapter X520-2] from the device manager,and click the [Jumbo Packet] item in [Advanced] tab, and select the value of [4088] or [9014] .

Red Hat Enterprise Linux

Add the descripthon "MTU=xxxx" to the file:

/etc/sysconfig/network-scripts/ifcfg-eth*

where :
"*" in "eth*" is the number allocated to a port of 10Gb 2port LAN Adapter.
"xxxx" is the Packet size. (ex. 9014)

■ Header Data Split setting

Header Splitting mode should not be used for this 10Gb 2port LAN adapter.
Please confirm if the "Header Data Split" setting is disabled.

Windows

Open the properties of [Intel(R) Ethernet Server Adapter X520-2] from the device manager,and click the [Header Data Split] item in [Advanced] tab, and select the value of [Disabled] .

Restrictions

■ PXE boot

The PXE boot is not supported.

■ Wake on LAN

The Wake on LAN is not supported.

■ iSCSI boot

The iSCSI boot is not supported.

2

Installation into System Equipment

This chapter explains the installation of CB2000 / CB320 10Gb 2-port LAN adapter into system equipment.

- ☐ Installing LAN Adapter
- ☐ Outside Appearance
- ☐ LED Specification
- ☐ Installation of cable

Installing LAN Adapter

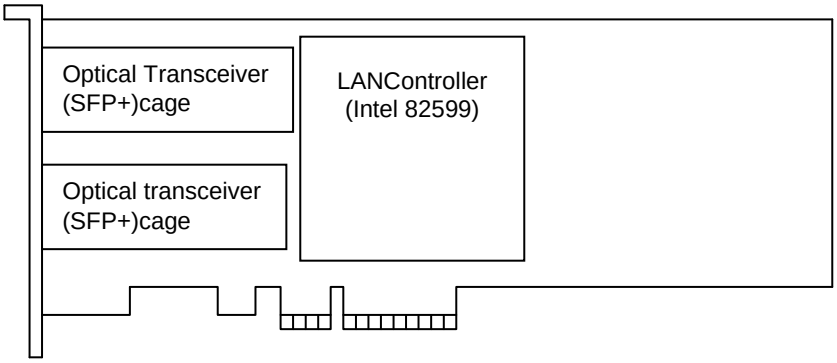
> ⚠CAUTION
>
> Addition or replacement of optional components must be performed by maintenance personnel. Do not attempt to remove the cover of the equipment. Do not attempt to install or remove optional components. Parts implemented in the system equipment are high-density, and highly complex. Operation or maintenance by inexperienced persons may lead to injury or equipment failure. When you need to add or replace optional components, contact your dealer or call maintenance personnel.

Only maintenance personnel are allowed to add each optional component to the system.

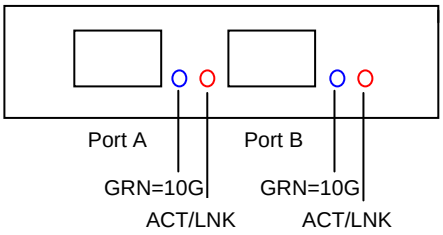
Contact the reseller which you have purchased the equipment from or call maintenance personnel.

Outside Appearance

- Top view



- Side view



LED Specification

LED Mark	Color	Condition	State
ACT/LNK	---	Turn off	Power off/Link down
	Green	Blinking	Data transfer
	Green	Lighting	Link up
GRN=10G	---	Turn off	Power off/10Mbps Link up
	Green	Lighting	10Gbps Link up
	Amber	Lighting	1Gbps Link up

Installation of cable

> ⚠CAUTION
>
> When wiring cables, take care not to trip over the cables. It could cause injury or failure of devices connected to the equipment. It could also cause loss of valuable data.

> Notice
>
> Do not place heavy items on the cables. Avoid wiring cables close to a thermal appliance. It may cause damage to cable sheaths, resulting in failure of the connected devices.

For the LAN cable specification, refer to the chapter6 "Basic Specification". Please don't use cables other than the LAN cable.

1. Insert LAN cable to Compute Blade 2000 / 320 10Gb 2-port LAN Adapter until being locked.
2. Insert LAN cable to connection destination such as LAN switches until being locked.

3

Driver

This chapter explains the setup of LAN drivers of the Compute Blade 2000 / 320 10Gb 2-port LAN adapter.

- ☐ To get the drivers
- ☐ How to install driver (Windows Server 2012/Windows Server 2012 R2)
- ☐ How to confirm the driver version (Windows Server 2012/Windows Server 2012 R2)
- ☐ How to install driver (Windows Server 2008/Windows Server 2008 R2)
- ☐ How to confirm the driver version (Windows Server 2008/Windows Server 2008 R2)
- ☐ How to install driver (Windows Server 2003 R2)
- ☐ How to confirm the driver version (Windows Server 2003 R2)
- ☐ How to install driver (Red Hat Enterprise Linux)
- ☐ How to confirm the driver version (Red Hat Enterprise Linux)

To get the driver

The LAN drivers for Compute Blade 320 10Gb 2-port LAN adapter are in "Hitachi Compute Blade Driver Kit (Version 05-04 or later)" CD-ROM or "Hitachi Server Navigator" media provided with the system equipment.

The LAN drivers for the Compute Blade 2000 10Gb 2-port LAN adapter are in "Hitachi Compute Blade 2000 Driver Kit CD (12-10 or later)" or "Hitachi Server Navigator" media" or "Server installation and monitoring tool" media provided with the system equipment.

The LAN drivers for Windows Server 2012 / Windows Server 2012 R2 are in "Driver Kit for Windows Server 2012"" media or "Hitachi Server Navigator" media" or "Server installation and monitoring tool ver.03-** (or later)" media provided with the system equipment.

The LAN driver for VMware can be downloaded from the Web site.

http://www.vmware.com/

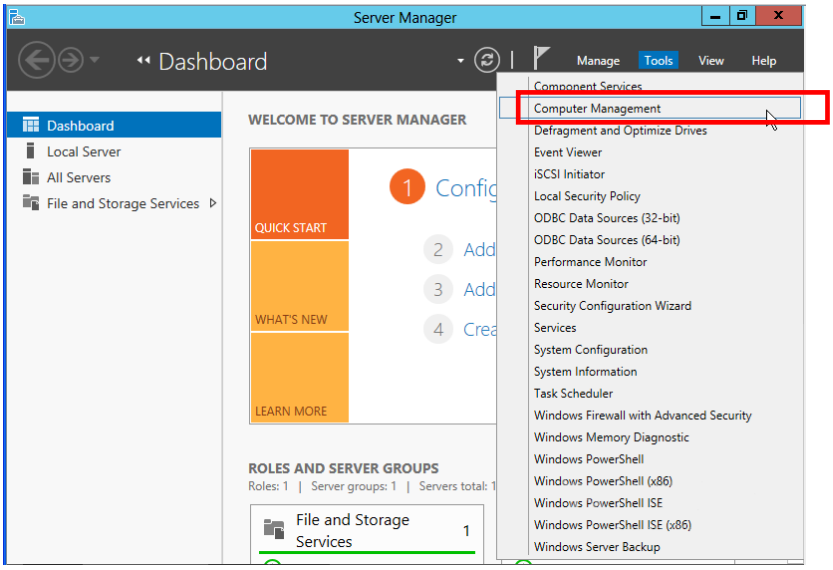
Download the driver for Intel 82599 10 Gigabit Ethernet Controllers.
See the README.txt in the downloaded file to setup the driver.

How to install driver (Windows Server 2012 / Windows Server 2012 R2)

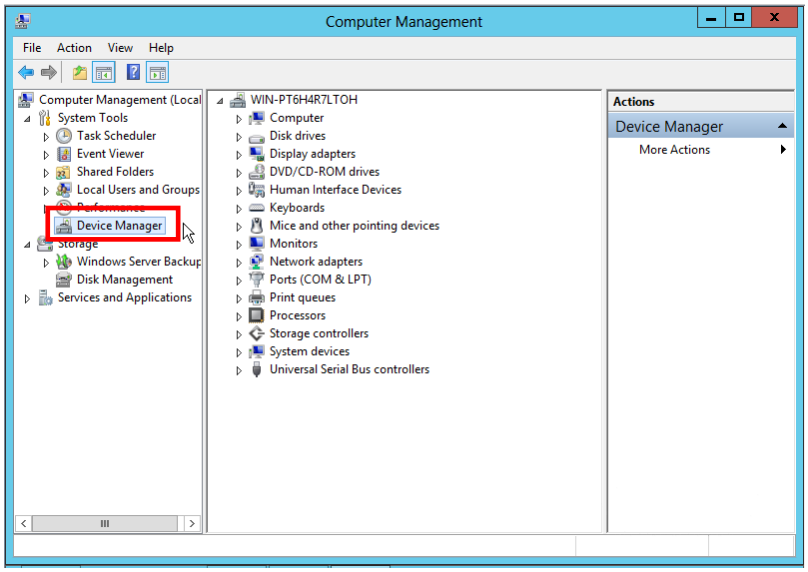
1 Turn on the power of the blade server, boot Windows Server 2012 / Windows Server 2012 R2, and log on to the OS as a user with administrator privilege (such as Administrator).

2 Insert "Driver Kit for Windows Server 2012" media or "Hitachi Server Navigator" media or "Server installation and monitoring tool ver.03-** (or later)" media into the DVD drive.

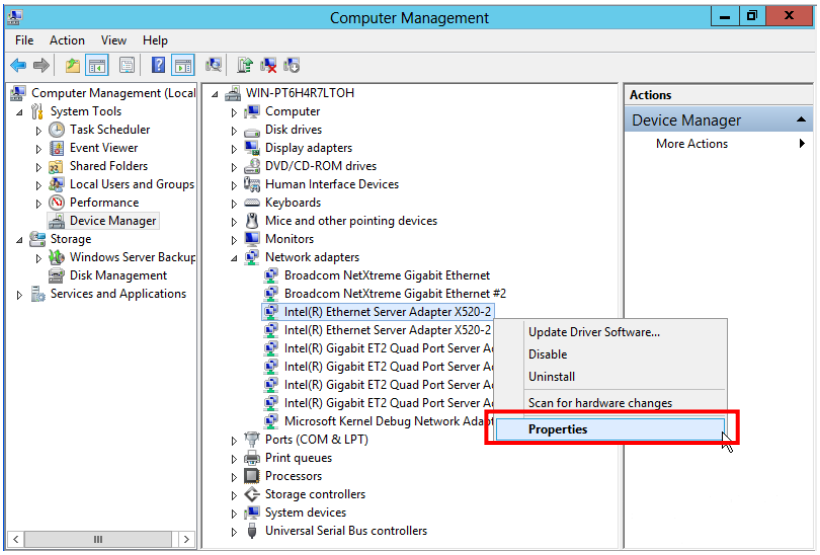
3 Select [Start] - [Server Manager] - [tool] -[Computer Managerment]



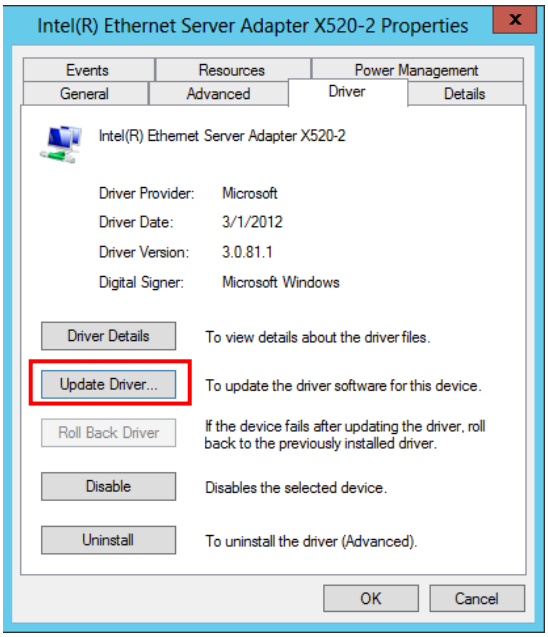
4 Select [Device Manger].



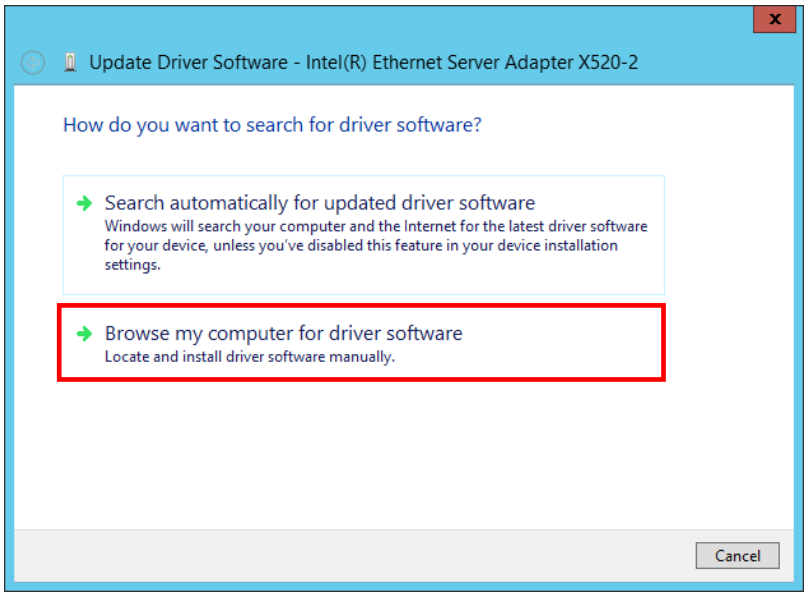
5 Click "Network adapters", and right-click "Intel(R) Ethernet Server Adapter X520-2", and select "Properties".



6 The properties window opens.Click "Update Driver..." in "Driver" tab.



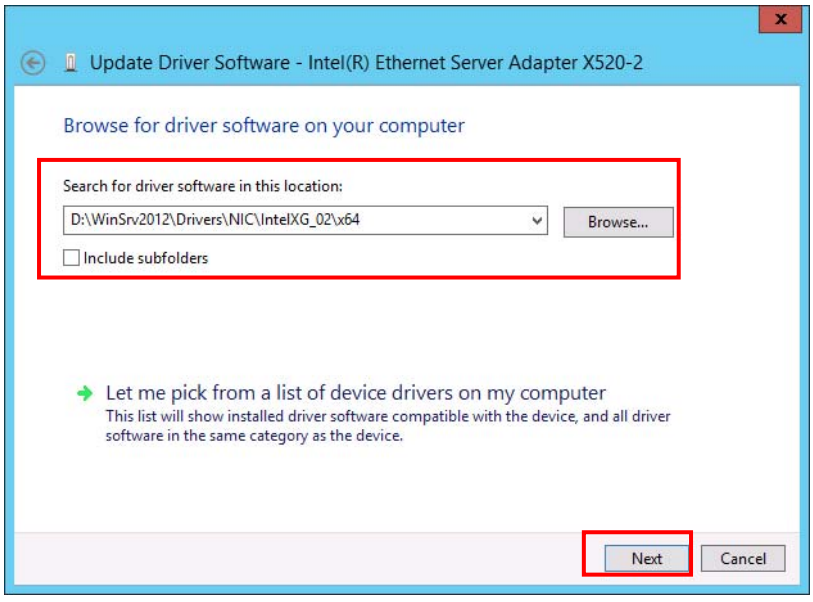
7 Click "Browse my computer for driver software".


Update Driver Software - Intel(R) Ethernet Server Adapter X520-2
How do you want to search for driver software?
Search automatically for updated driver software
Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings.
Browse my computer for driver software
Locate and install driver software manually.
Cancel

8 Select [Search for driver software in this location:] and input the followings. Remove the check mark from [Include subfolders], and then click the [Next] button.

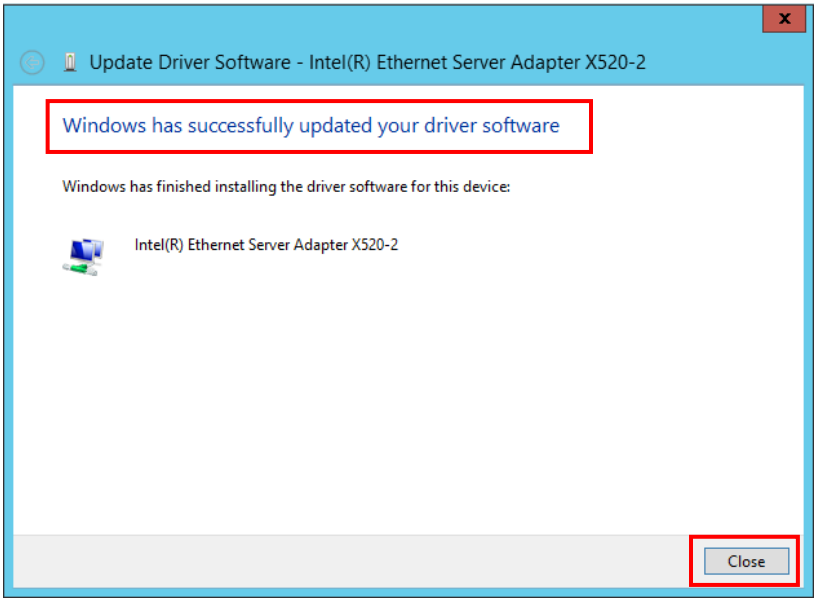
Windows Server 2012 :
D:\ WinSrv2012\Drivers\NIC\IntelXG_02\x64

Windows Server 2012 R2
D:\ WinSrv2012R2\Drivers\NIC\IntelXG_02\x64


Update Driver Software - Intel(R) Ethernet Server Adapter X520-2
Browse for driver software on your computer
Search for driver software in this location:
D:\WinSrv2012\Drivers\NIC\IntelXG_02\x64
Browse...
Include subfolders
Let me pick from a list of device drivers on my computer
This list will show installed driver software compatible with the device, and all driver software in the same category as the device.
Next
Cancel

D: refers to CD/DVD drive name.

9 Confirm that "Windows has successfully updated your driver software." is displayed, and then click the [Close] button.


Update Driver Software - Intel(R) Ethernet Server Adapter X520-2
Windows has successfully updated your driver software
Windows has finished installing the driver software for this device:
Intel(R) Ethernet Server Adapter X520-2
Close

10 Repeat the steps 5 through 9 for all "Intel(R) Ethernet Server Adapter X520-2 #x (x is a number)" .

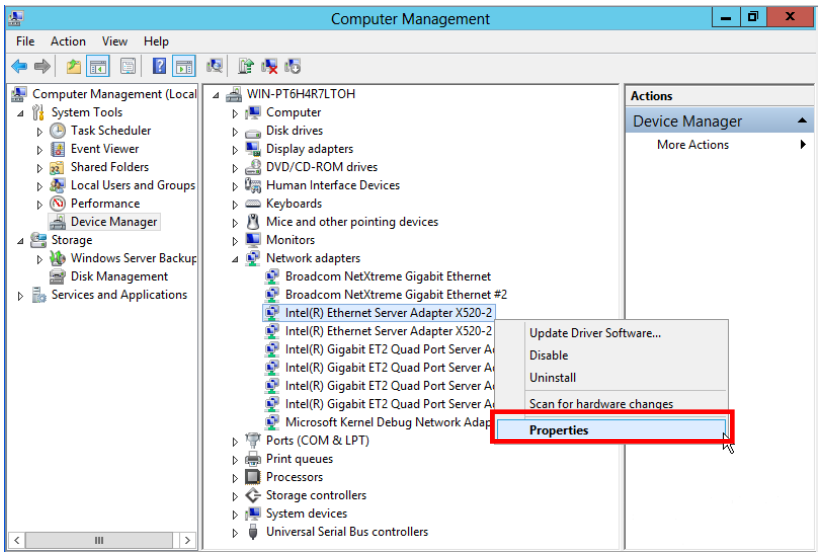
11 Remove the media from the DVD drive, and reboot the system.

How to confirm the driver version (Windows Server 2012 / Windows Server 2012 R2)

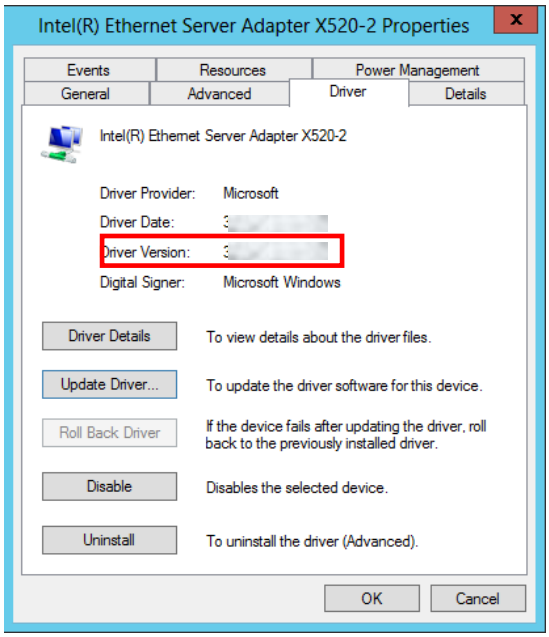
1 Turn on the power of the blade server, boot Windows Server 2012 / Windows Server 2012 R2, and then log on to the OS as a user with administrator privilege (such as Administrator).

2 Open the [Device Manager] window.

3 Right-click the [Intel(R) Ethernet Server Adapter X520-2 #x (x is a number)] under the [Network adapters], and click [Properties].



4 Click [Driver] tab, and confirm the version displayed in the right of "Driver Version;"



How to install driver (Windows Server 2008/Windows Server 2008 R2)

(The following assembly operation is an example of Windows Server 2008 R2. For Windows Server 2008, some of the indication of the screens differ somewhat.)

1 Turn on the power of the blade server, boot Windows Server 2008/Windows Server 2008 R2, and then log on to the OS as a user with administrator privilege (such as Administrator).

2 Insert the driver media into the CD/DVD drive.

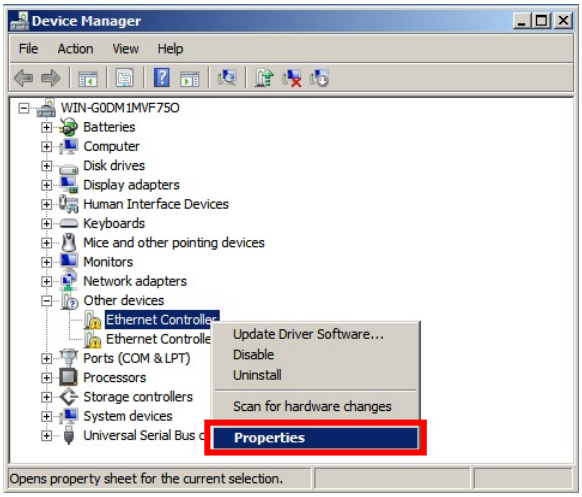
CB2000 : "Hitachi Compute Blade 2000 Driver Kit CD (12-10 or later)" or
"Hitachi Server Navigator" or
"Server installation and monitoring tool".

CB320 : "Hitachi Compute Blade Driver Kit (Version 05-04 or later)" or
"Hitachi Server Navigator".

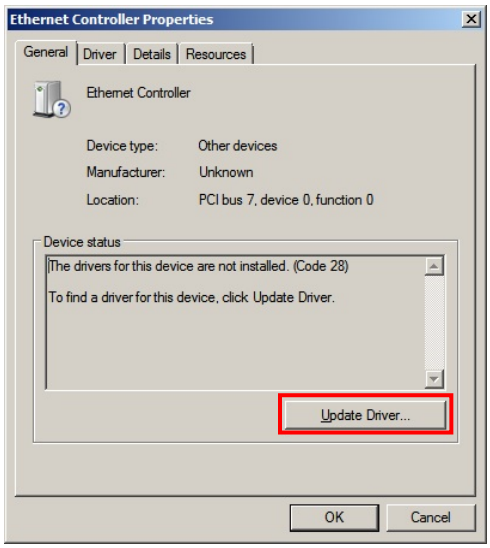
3 Click the [Start] button and select [Server Manager].

4 Select [Diagnose] and then [Device Manager].

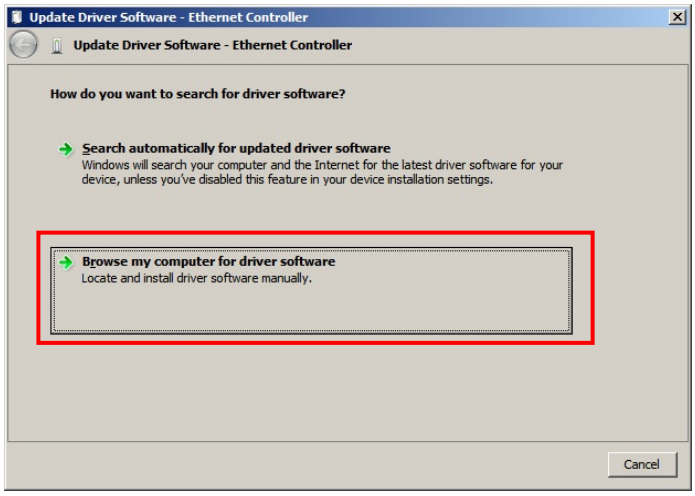
5 Right-click "Ethernet Controller" under the "Other devices" and click [Properties].



6 When "Location" of [General] tab is as follows, click [Update Driver...] button.



7 Select [Browse my computer for driver software].


Update Driver Software - Ethernet Controller
Update Driver Software - Ethernet Controller
How do you want to search for driver software?
Search automatically for updated driver software
Windows will search your computer and the Internet for the latest driver software for your device, unless you've disabled this feature in your device installation settings.
Browse my computer for driver software
Locate and install driver software manually.
Cancel

8 Select [Search for driver software in this location:] and input the followings. Remove the check mark from [Include subfolders], and then click the [Next] button.

For Compute Blade 2000 (X55A2 model, X55E2 model) :

Using " Driver Kit" CD-ROM :

- Windows Server 2008R2 :D:\X55x2\Win2008R2\Drivers\LAN\INTELXG_01\x64
- Windows Server 2008 32bit : D:\X55x2\Win2008\Drivers\LAN\INTELXG_01\x86
- Windows Server 2008 64bit : D:\X55x2\Win2008\Drivers\LAN\INTELXG_01\x64

Using "Hitachi Server Navigator" or "Server installation and monitoring tool" media :

- Windows Server 2008 R2 :D:\WinSrv2008R2\Drivers\NIC\IntelXG_02\X64
- Windows Server 2008 32bit : D:\WinSrv2008\Drivers\NIC\IntelXG_02\x86
- Windows Server 2008 64bit : D:\WinSrv2008\Drivers\NIC\IntelXG_02\x64

For Compute Blade 2000 (X57A1 model, X57E1 model) :

Using " Driver Kit" CD-ROM :

- Windows Server 2008 R2 :D:\X57x1\Win2008R2\Drivers\LAN\INTELXG_01\x64
- Windows Server 2008 32bit : D:\X57x1\Win2008\Drivers\LAN\INTELXG_01\x86
- Windows Server 2008 64bit : D:\X57x1\Win2008\Drivers\LAN\INTELXG_01\x64

Using "Hitachi Server Navigator" or "Server installation and monitoring tool" media :

- Windows Server 2008 R2 :D:\WinSrv2008R2\Drivers\NIC\IntelXG_02\X64
- Windows Server 2008 32bit : D:\WinSrv2008\Drivers\NIC\IntelXG_02\x86
- Windows Server 2008 64bit : D:\WinSrv2008\Drivers\NIC\IntelXG_02\x64

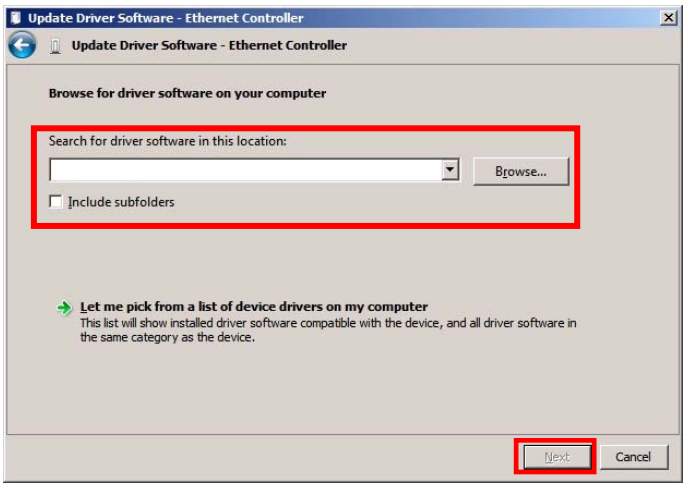
For Compute Blade 320 :

Using " Driver Kit" CD-ROM :

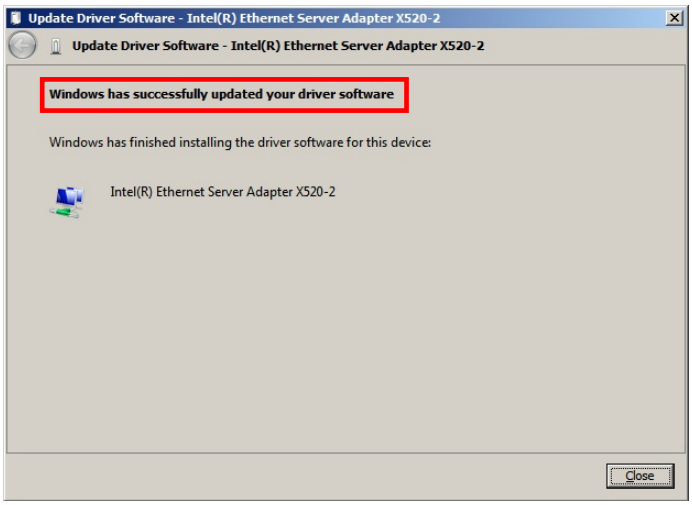
- Windows Server 2008 R2 :D:\X51x5\Win2008R2\Drivers\LAN\INTELXG_01\x64
- Windows Server 2008 32bit : D:\X51x5\Win2008\Drivers\LAN\INTELXG_01\x86
- Windows Server 2008 64bit : D:\X51x5\Win2008\Drivers\LAN\INTELXG_01\x64

Using "Hitachi Server Navigator" media :

- Windows Server 2008 R2 :D:\WinSrv2008R2\Drivers\NIC\IntelXG_03\X64
- Windows Server 2008 32bit : D:\WinSrv2008\Drivers\NIC\IntelXG_03\x86
- Windows Server 2008 64bit : D:\WinSrv2008\Drivers\NIC\IntelXG_03\x64

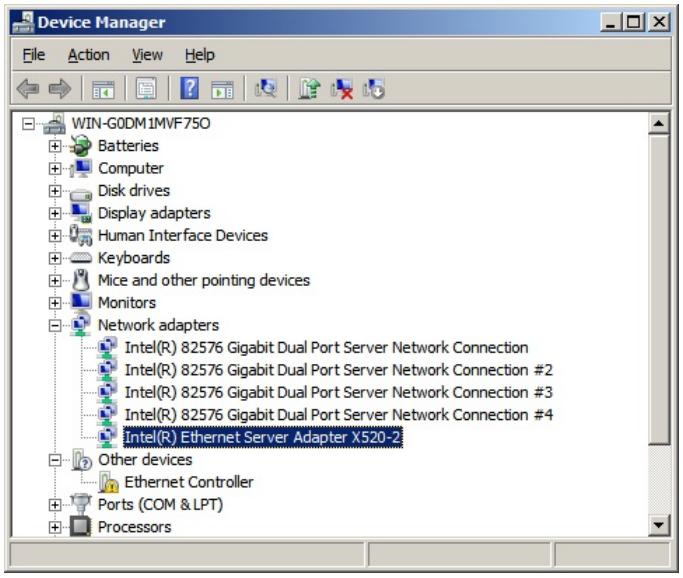

Update Driver Software - Ethernet Controller
Update Driver Software - Ethernet Controller
Browse for driver software on your computer
Search for driver software in this location:
Browse...
Include subfolders
Let me pick from a list of device drivers on my computer
This list will show installed driver software compatible with the device, and all driver software in the same category as the device.
Next
Cancel

9 Confirm that "Windows has successfully updated your driver software." is displayed, and then click the [Close] button.

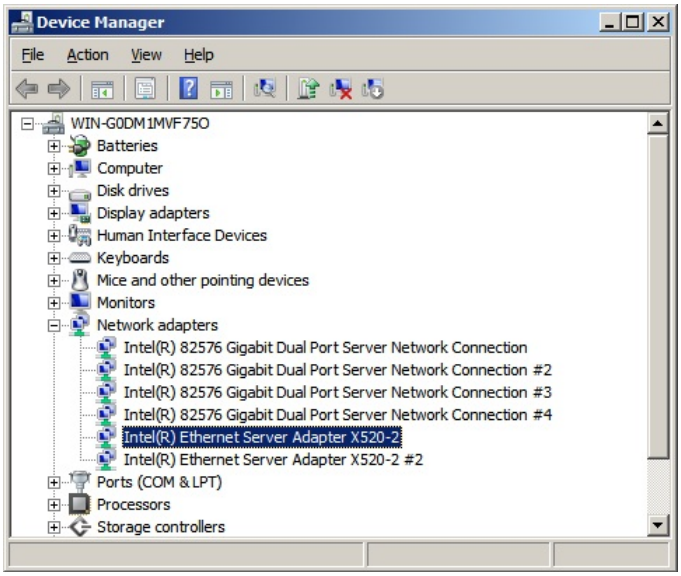

Update Driver Software - Intel(R) Ethernet Server Adapter X520-2
Update Driver Software - Intel(R) Ethernet Server Adapter X520-2
Windows has successfully updated your driver software
Windows has finished installing the driver software for this device:
Intel(R) Ethernet Server Adapter X520-2
Close

Tip

After completing the installation of OS driver, [Intel(R) Ethernet Server Adapter X520-2] is displayed under the [Network adapters].



10 Repeat the steps 5 through 9 for all "Intel(R) Ethernet Server Adapter X520-2 #x (x is a number)".



11 Remove the media from the CD/DVD drive, and reboot the system.

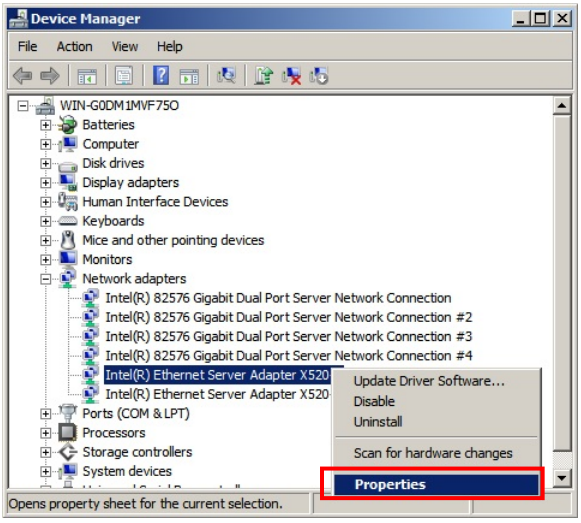
How to confirm the driver version (Windows Server 2008/ Windows Server 2008 R2)

1 Turn on the power of the blade server, boot Windows Server 2008/Windows Server 2008 R2, and log on as a user with administrator privilege (such as Administrator).

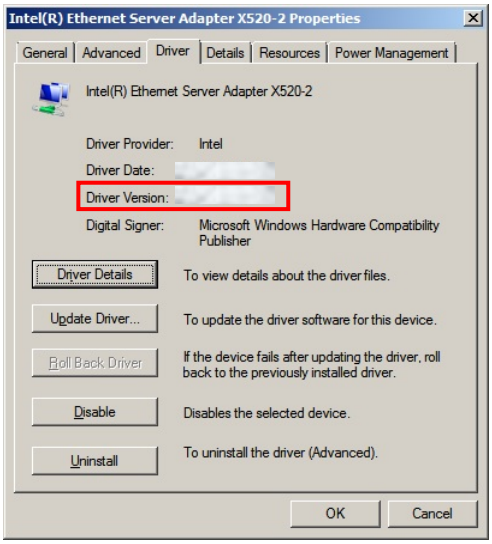
2 Click the [Start] button and select [Server Manager].

3 Select [Diagnose] and then [Device Manager].

4 Right-click the [Intel(R) Ethernet Server Adapter X520-2 #x (x is a number)] under the [Network adapters], and click [Properties].



5 Click [Driver] tab, and confirm the version displayed on the right of "Driver Version".


Intel(R) Ethernet Server Adapter X520-2 Properties
General Advanced Driver Details Resources Power Management
Intel(R) Ethernet Server Adapter X520-2
Driver Provider: Intel
Driver Date:
Driver Version:
Digital Signer: Microsoft Windows Hardware Compatibility Publisher
Driver Details
To view details about the driver files.
Update Driver...
To update the driver software for this device.
Roll Back Driver
If the device fails after updating the driver, roll back to the previously installed driver.
Disable
Disables the selected device.
Uninstall
To uninstall the driver (Advanced).
OK
Cancel

How to install driver (Windows Server 2003 R2)

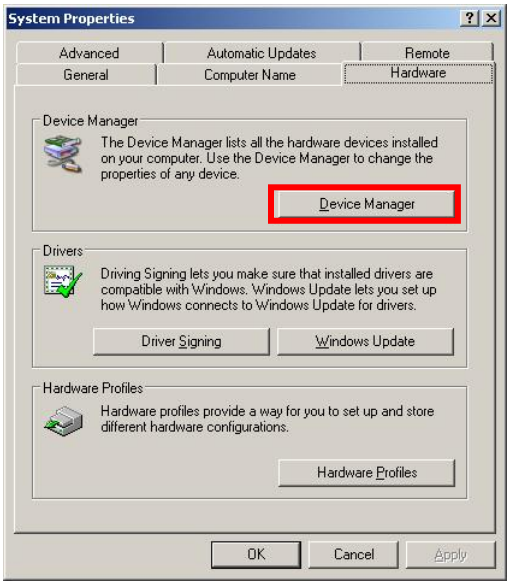
1 Turn on the power of the blade server, boot Windows Server 2003 R2, and then log on as "Administrator".

2 Insert " Driver Kit" CD-ROM into the CD/DVD drive.

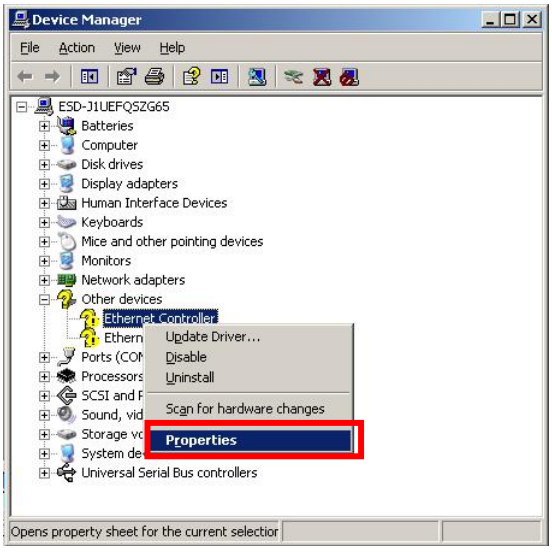
CB2000 : Hitachi Compute Blade 2000 Driver Kit CD (12-10 or later)
CB320 : Hitachi Compute Blade Driver Kit (Version 05-04 or later)

3 Click [Start] - [Control Panel] - [System].

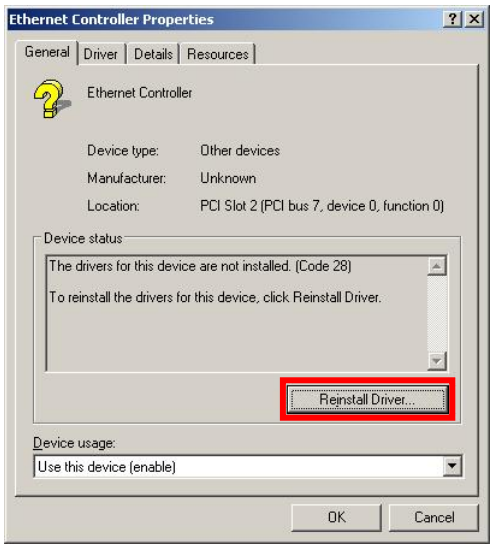
4 Click [Device Manager] under the [Hardware] tab.


System Properties
Advanced
Automatic Updates
Remote
General
Computer Name
Hardware
Device Manager
The Device Manager lists all the hardware devices installed on your computer. Use the Device Manager to change the properties of any device.
Device Manager
Drivers
Driving Signing lets you make sure that installed drivers are compatible with Windows. Windows Update lets you set up how Windows connects to Windows Update for drivers.
Driver Signing
Windows Update
Hardware Profiles
Hardware profiles provide a way for you to set up and store different hardware configurations.
Hardware Profiles
OK
Cancel
Apply

5 Double-click [Other Devices] and right-click the network adapter whose driver has not been updated and click [Properties].



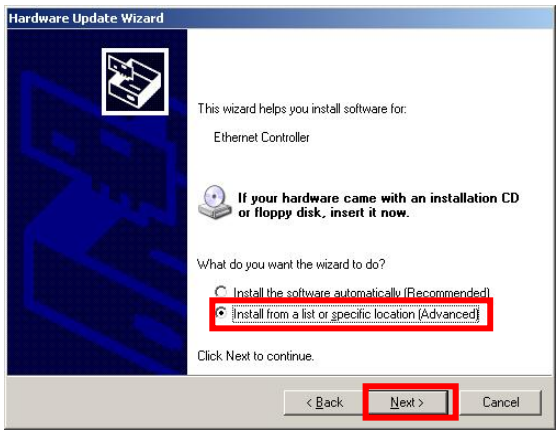
6 Click [Reinstall Driver...] button.



7 Select [No, not this time] and click [Next].

Hardware Update Wizard
Welcome to the Hardware Update Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).
Online privacy information
Can Windows connect to Windows Update to search for software?
Yes, this time only
Yes, now and every time I connect a device
No, not this time
Click Next to continue.
< Back
Next >
Cancel

8 Select [Install from list or specific location], and click [Next>].


Hardware Update Wizard
This wizard helps you install software for:
Ethernet Controller
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

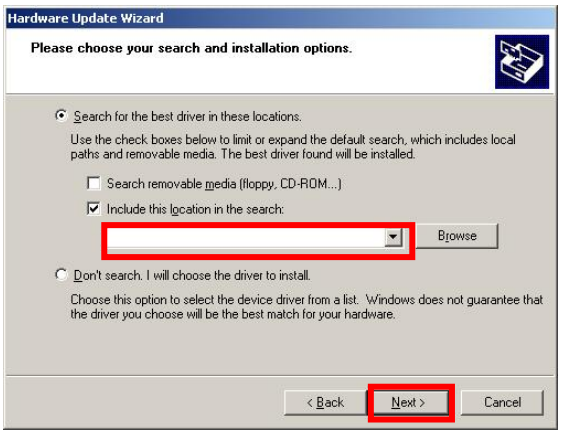
9 Select [Include following Location], enter the followings and then click [Next].

For Compute Blade 2000 (all models) :

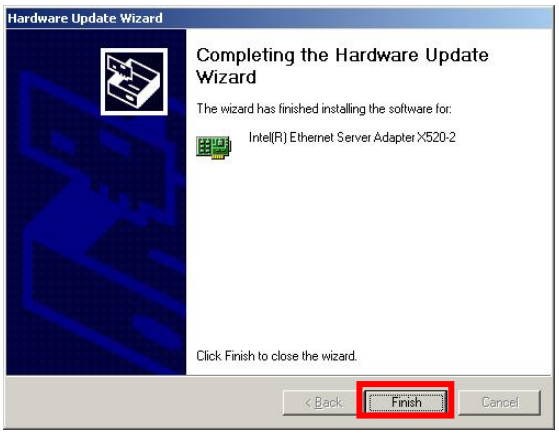
Windows Server 2003(32bit): \X55x2\Win2003R2\Drivers\LAN\INTELXG_01\x86
Windows Server 2003(x64): \X55x2\Win2003R2\Drivers\LAN\INTELXG_01\x64

For Compute Blade 320 :

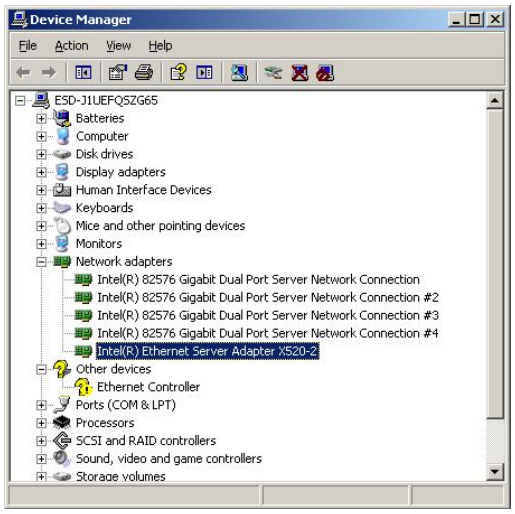
Windows Server 2003(32 bit): \X51x5\Win2003R2\Drivers\LAN\INTELXG_01\x86
Windows Server 2003(x64): \X51x5\Win2003R2\Drivers\LAN\INTELXG_01\x64


Hardware Update Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

10 Click [Finish].



After completing the installation of driver, [Intel(R) Ehternet Server Adapter X520-2] is displayed under the [Network adapters].



11 If there are network adapters whose LAN driver has not been updated, repeat above Steps 5 to 10 for each network adapters.

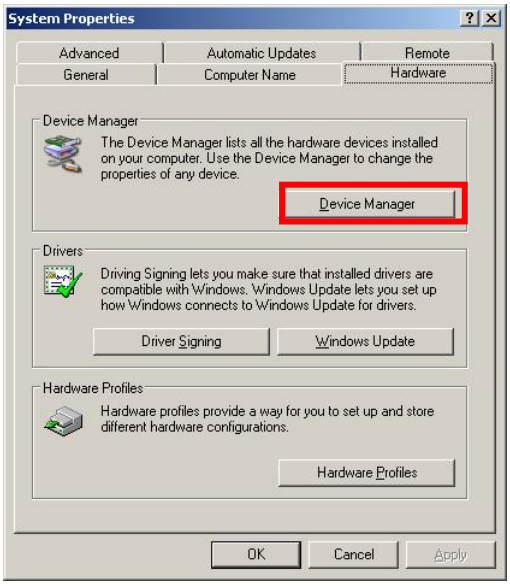
12 Remove the CD-ROM from the CD/DVD drive, and reboot the blade server.

How to confirm the driver version (Windows Server 2003 R2

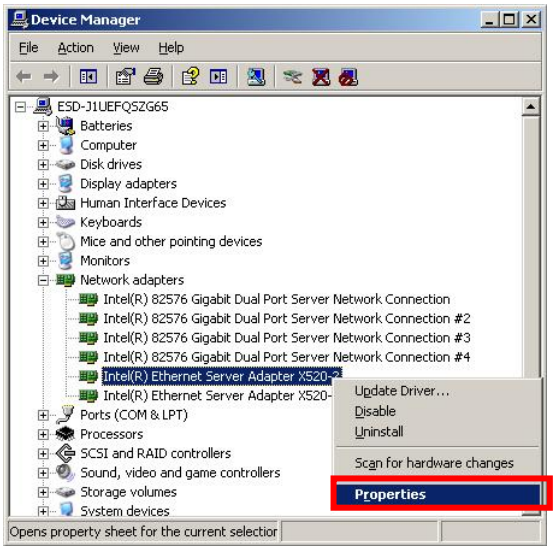
1 Turn on the power of the blade server, boot Windows Server 2003 R2, and log on as a user with administrator privilege (such as Administrator).

2 Click [Start] - [Control Panel] - [System].

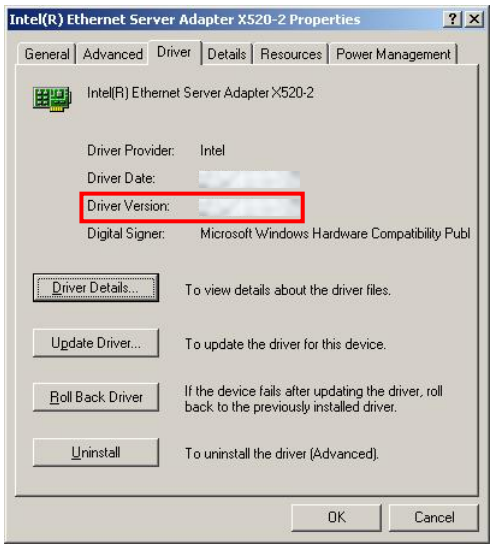
3 Click [Device Manager] under the [Hardware] tab.


System Properties
Advanced
Automatic Updates
Remote
General
Computer Name
Hardware
Device Manager
The Device Manager lists all the hardware devices installed on your computer. Use the Device Manager to change the properties of any device.
Device Manager
Drivers
Driving Signing lets you make sure that installed drivers are compatible with Windows. Windows Update lets you set up how Windows connects to Windows Update for drivers.
Driver Signing
Windows Update
Hardware Profiles
Hardware profiles provide a way for you to set up and store different hardware configurations.
Hardware Profiles
OK
Cancel
Apply

4 Right-click the [Intel(R) Ethernet Server Adapter X520-2] under the [Network adapters] and click [Properties].



5 Click [Driver] tab, and confirm the version displayed on the right of "Driver Version;"



How to install driver (Red Hat Enterprise Linux)

See the following documents for the procedure to setup drivers on Red Hat Enterprise Linux

- Compute blade 2000 : Hitachi Compute Blade 2000 SOFTWARE GUIDE

- Compute blade 320 : Hitachi Compute Blade 320 SOFTWARE GUIDE

How to confirm the driver version (Red Hat Enterprise Linux)

1 Turn on the power of the blade server, boot Red Hat Enterprise Linux, and then log on as "root".

2 Execute the following command.

```
# modinfo ixgbe
```

3 Confirm the version displayed in [version].

```
filename:     /lib/modules/<Kernel Version>/kernel/drivers/net/ixgbe/ixgbe.ko
version:       xx.xx.xx
license:       GPL
description:  Intel(R) 10 Gigabit PCI Express Network Driver
author:        Intel Corporation, <linux.nics@intel.com>
```

4

Utility

This chapter explains the setup of utility on Windows Server 2008 /Windows Server 20008 R2 and Windows Server 2003 R2.

The utility is not supported for Windows Server 2012 / Windows Server 2012 R2. Use the standard function of these OS's instead of the utility.

- ☐ Outline
- ☐ How to install utility (Windows Server 2008/Windows Server 2008 R2)
- ☐ How to confirm the utility version (Windows Server 2008/Windows Server 2008 R2)
- ☐ How to install utility (Windows Server 2003 R2)
- ☐ How to confirm the utility version (Windows Server 2003 R2)

How to install utility (Windows Server 2008/Windows Server 2008 R2)

1 Turn on the power of the blade server, boot Windows Server 2008/Windows Server 2008 R2, and then log on to the OS as a user with administrator privilege (such as Administrator).

2 Insert the driver media into the CD/DVD drive.

CB2000 : "Hitachi Compute Blade 2000 Driver Kit CD (12-10 or later)" or
"Hitachi Server Navigator" or
"Server installation and monitoring tool".

CB320 : "Hitachi Compute Blade Driver Kit (Version 05-04 or later)" or
"Hitachi Server Navigator".

3 Click [Start] - [Run].

4 Click [OK] with specifying the following files.

For Compute Blade 2000 (X55A2 model, X55E2 model) :

Using " Driver Kit" CD-ROM :

Windows Server 2008 R2, Windows Server 2008 64bit :
D:\X55x2\Win2008\Utility\PROSetDX\APPS\PROSETDX\Winx64\DxSetup.exe

Windows Server 2008 32bit :
D: \X55x2\Win2008\Utility\PROSetDX\APPS\PROSETDX\Win32\DxSetup.exe

Using "Hitachi Server Navigator" media or "Server installation and monitoring tool" :

Windows Server 2008 R2, Windows Server 2008 64bit :
D: \WinSrv2008\Utility\PROSet\PROSet_03\APPS\PROSETDX\Winx64\Dxsetup.exe

Windows Server 2008 32bit :
D: \WinSrv2008\Utility\PROSet\PROSet_03\APPS\PROSETDX\Win32\Dxsetup.exe

For Compute Blade 2000 (X57A1 model, X57E1 model) :

Using " Driver Kit" CD-ROM :

Windows Server 2008 R2, Windows Server 2008 64bit :
D: \X57x1\Win2008\Utility\PROSetDX\APPS\PROSETDX\Winx64\DxSetup.exe

Windows Server 2008 32bit :
D: \X57x1\Win2008\Utility\PROSetDX\APPS\PROSETDX\Win32\DxSetup.exe

Using "Hitachi Server Navigator" media or "Server installation and monitoring tool":

Windows Server 2008 R2, Windows Server 2008 64bit :
D: \WinSrv2008\Utility\PROSet\PROSet_03\APPS\PROSETDX\Winx64\Dxsetup.exe

Windows Server 2008 32bit :
D: \WinSrv2008\Utility\PROSet\PROSet_03\APPS\PROSETDX\Win32\Dxsetup.exe

For Compute Blade 320:

Using " Driver Kit" CD-ROM :

Windows Server 2008 R2 :
D: \X51x5\Win2008R2\Utility\PROSetDX\APPS\PROSETDX\Winx64\DxSetup.exe

Windows Server 2008 32bit :
D:\X51x5\Win2008\Utility\PROSetDX\APPS\PROSETDX\Vista32\DxSetup.exe

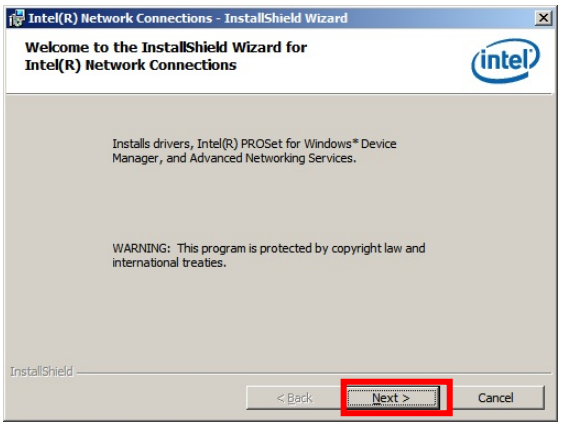
Windows Server 2008 64bit :
D:\X51x5\Win2008\Utility\PROSetDX\APPS\PROSETDX\Vistax64\DxSetup.exe

Using "Hitachi Server Navigator" media :

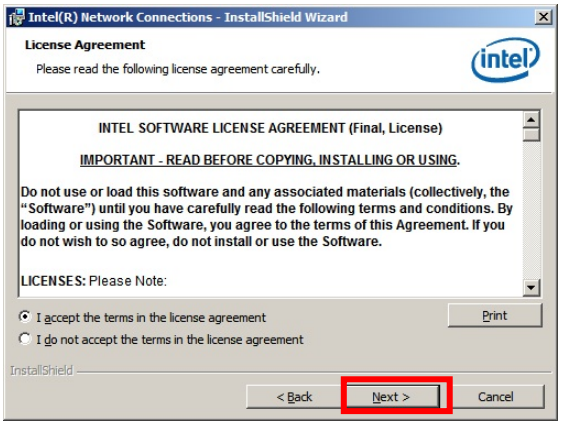
Windows Server 2008 R2, Windows Server 2008 64bit :
D:\WinSrv2008\Utility\PROSet\PROSet_04\APPS\PROSETDX\Winx64\Dxsetup.exe

Windows Server 2008 32bit :
D:\WinSrv2008\Utility\PROSet\PROSet_04\APPS\PROSETDX\Win32\Dxsetup.exe

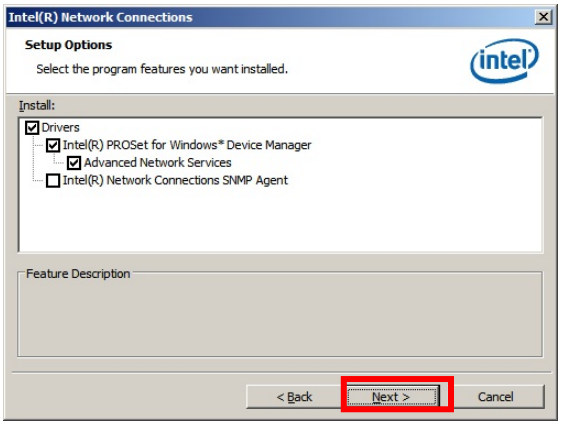
5 Click [Next].


Intel(R) Network Connections - InstallShield Wizard
Welcome to the InstallShield Wizard for Intel(R) Network Connections
Installs drivers, Intel(R) PROSet for Windows® Device Manager, and Advanced Networking Services.
WARNING: This program is protected by copyright law and international treaties.
InstallShield
< Back
Next >
Cancel

6 Read the License Agreement Terms. If you agree to the terms, select "I accept the terms in the license agreement", and click [Next].

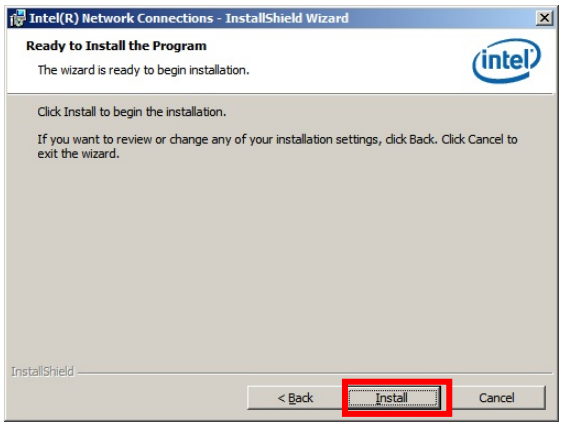

Intel(R) Network Connections - InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
INTEL SOFTWARE LICENSE AGREEMENT (Final, License)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
LICENSES: Please Note:
I accept the terms in the license agreement
I do not accept the terms in the license agreement
Print
InstallShield
< Back
Next >
Cancel

7 Click [Next].

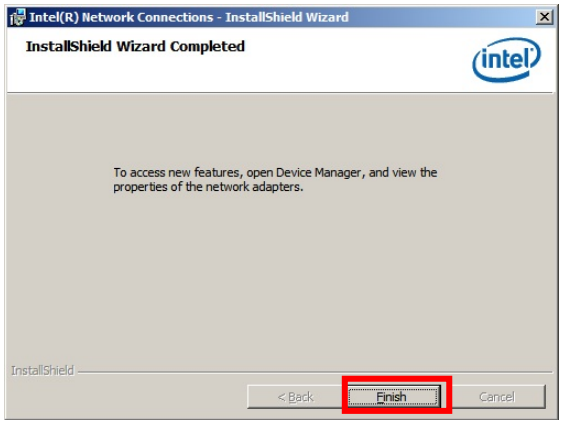


Do not check the box of "Intel(R) Network Connections SNMP Agent".

8 Click [Install].


Intel(R) Network Connections - InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

9 Click [Finish].


Intel(R) Network Connections - InstallShield Wizard
InstallShield Wizard Completed
To access new features, open Device Manager, and view the properties of the network adapters.
InstallShield
< Back
Finish
Cancel

It is not a problem if a warning message "WinMgmtWMI" is displayed after installing Intel(R) PROSet.

10 Reboot the blade server.

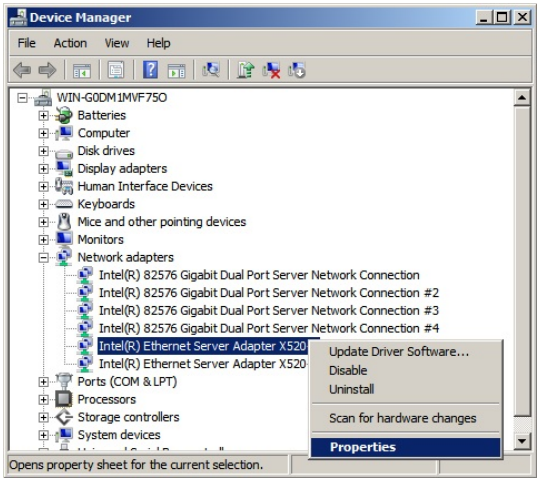
How to confirm the utility version (Windows Server 2008/ Windows Server 2008 R2)

1 Turn on the power of the blade server, boot Windows Server 2008/Windows Server 2008 R2, and then log on to the OS as a user with administrator privilege (such as Administrator).

2 Click the [Start] button and select [Server Manager].

3 Select [Diagnose] and then [Device Manager].

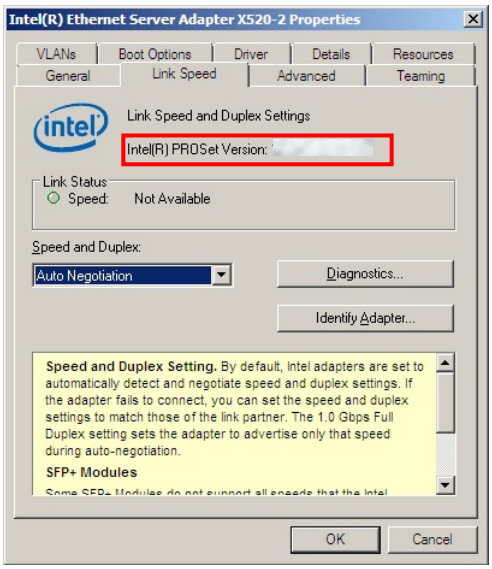
4 Right-click the [Intel(R) Ehternet Server Adapter X520-2] under the [Network adapters], and click [Properties].



5 Click [Link Speed] tab.

After utility is installed, the link speed tab is displayed.

6 Confirm the version displayed in [Intel(R) PROSet Version].


Intel(R) Ethernet Server Adapter X520-2 Properties
VLANs
Boot Options
Driver
Details
Resources
General
Link Speed
Advanced
Teaming
Link Speed and Duplex Settings
Intel(R) PROSet Version:
Link Status
Speed: Not Available
Speed and Duplex:
Auto Negotiation
Diagnostics...
Identify Adapter...
Speed and Duplex Setting. By default, Intel adapters are set to automatically detect and negotiate speed and duplex settings. If the adapter fails to connect, you can set the speed and duplex settings to match those of the link partner. The 1.0 Gbps Full Duplex setting sets the adapter to advertise only that speed during auto-negotiation.
SFP+ Modules
OK
Cancel

How to install utility (Windows Server 2003 R2)

1 Turn on the power of the blade server, boot Windows Server 2003 R2, and then log on to the OS as a user with administrator privilege (such as Administrator)

2 Insert " Driver Kit" CD-ROM into the CD/DVD drive.

CB2000 : Hitachi Compute Blade 2000 Driver Kit CD (12-10 or later)
CB320 : Hitachi Compute Blade Driver Kit (Version 05-04 or later)

Click [Start] - [Run].

3 Click [OK] with specifying the following files.

For Compute Blade 2000 (all models):

Windows Server 2003R2(32 bit) :
D:\X55x2\Win2003R2\Utility\PROSetDX\APPS\PROSETDX\Win32\DxSetup.exe

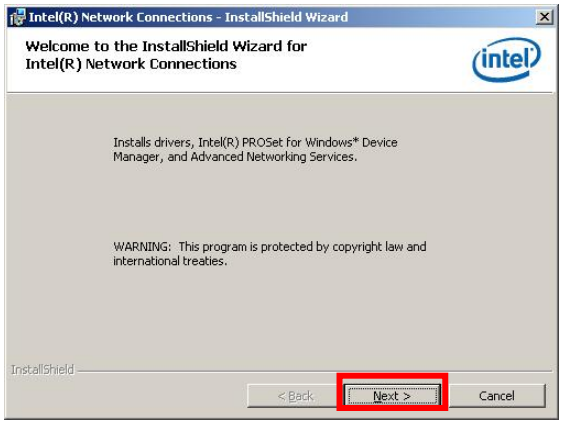
Windows Server 2003R2(x64) :
D:\X55x2\Win2003R2\Utility\PROSetDX\APPS\PROSETDX\Winx64\DxSetup.exe

For Compute Blade 320:

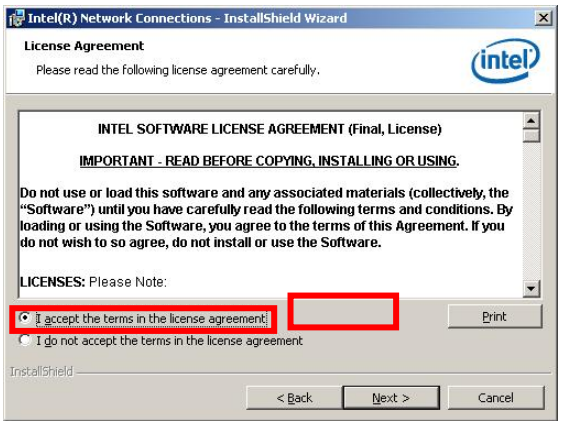
Windows Server 2003R2(32 bit) :
D:\X51x5\Win2003R2\Utility\PROSetDX\x86\APPS\PROSETDX\Win32\DxSetup.exe

Windows Server 2003R2(x64) :
D:\X51x5\Win2003R2\Utility\PROSetDX\x64\APPS\PROSETDX\Winx64\DxSetup.exe

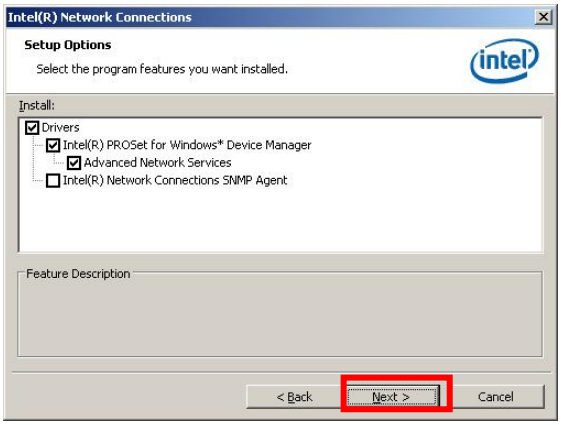
4 Click [Next].


Intel(R) Network Connections - InstallShield Wizard
Welcome to the InstallShield Wizard for Intel(R) Network Connections
intel
Installs drivers, Intel(R) PROSet for Windows* Device Manager, and Advanced Networking Services.
WARNING: This program is protected by copyright law and international treaties.
InstallShield
< Back
Next >
Cancel

5 Read the License Agreement Terms. If you agree to the terms, select "I accept the terms in the license agreement" and click [Next].

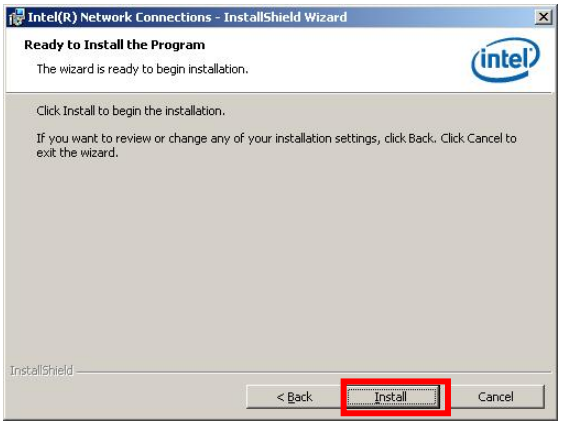

Intel(R) Network Connections - InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
INTEL SOFTWARE LICENSE AGREEMENT (Final, License)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
LICENSES: Please Note:
I accept the terms in the license agreement
I do not accept the terms in the license agreement
Print
InstallShield
< Back
Next >
Cancel

6 Check boxes of "Intel(R) PROSet for Windows* Device Manager" and "Advanced Network Services", and click [Next].

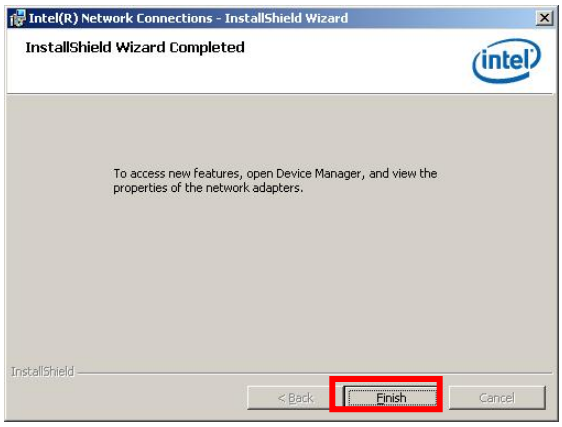


Do not check the box of "Intel(R) Network Connections SNMP Agent".

7 Click [Install].


Intel(R) Network Connections - InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

8 Click [Finish].


Intel(R) Network Connections - InstallShield Wizard
InstallShield Wizard Completed
To access new features, open Device Manager, and view the properties of the network adapters.
InstallShield
< Back
Finish
Cancel

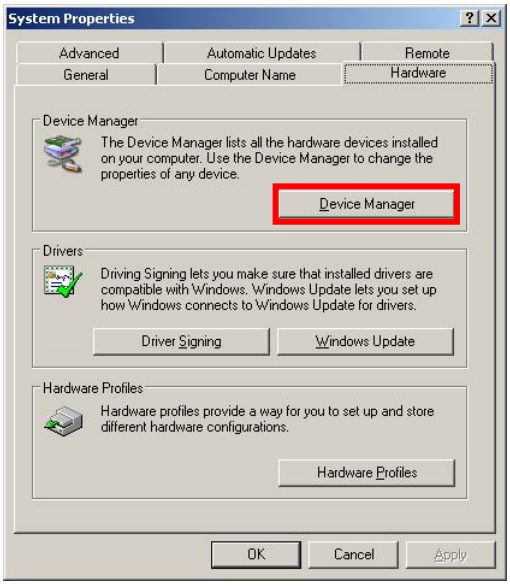
9 Reboot the blade server.

How to confirm the utility version (Windows Server 2003 R2)

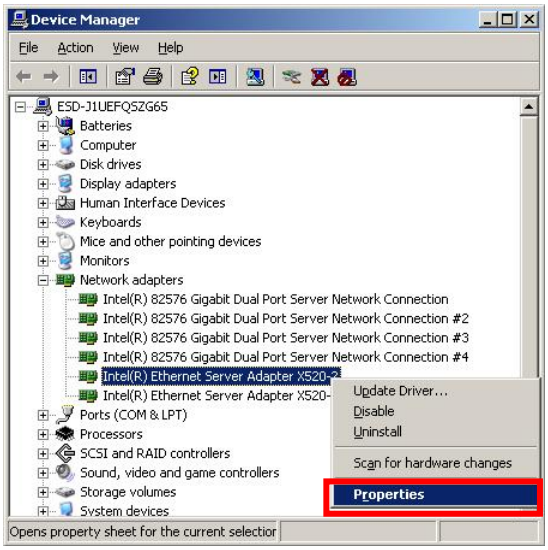
1 Turn on the power of the blade server, boot Windows Server 2003 R2, and then log on to the OS as a user with administrator privilege (such as Administrator).

2 Click [Start] - [Control Panel] - [System].

3 Click [Device Manager] under the [Hardware] tab.


System Properties
Advanced
Automatic Updates
Remote
General
Computer Name
Hardware
Device Manager
The Device Manager lists all the hardware devices installed on your computer. Use the Device Manager to change the properties of any device.
Device Manager
Drivers
Driving Signing lets you make sure that installed drivers are compatible with Windows. Windows Update lets you set up how Windows connects to Windows Update for drivers.
Driver Signing
Windows Update
Hardware Profiles
Hardware profiles provide a way for you to set up and store different hardware configurations.
Hardware Profiles
OK
Cancel
Apply

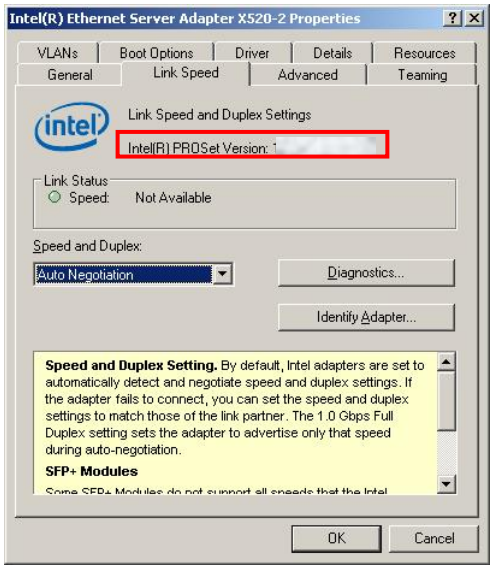
4 Right-click the [Intel(R) Ethernet Server Adapter X520-2] under the [Network adapters] and click [Properties].



5 Click [Link Speed] tab.

After utility is installed, the link speed tab is displayed.

6 Confirm the version displayed in [Intel(R) PROSet Version].


Intel(R) Ethernet Server Adapter X520-2 Properties
VLANs
Boot Options
Driver
Details
Resources
General
Link Speed
Advanced
Teaming
Link Speed and Duplex Settings
Intel(R) PROSet Version:
Link Status
Speed:
Not Available
Speed and Duplex:
Auto Negotiation
Diagnostics...
Identify Adapter...
Speed and Duplex Setting. By default, Intel adapters are set to automatically detect and negotiate speed and duplex settings. If the adapter fails to connect, you can set the speed and duplex settings to match those of the link partner. The 1.0 Gbps Full Duplex setting sets the adapter to advertise only that speed during auto-negotiation.
SFP+ Modules
OK
Cancel

5

LAN Advanced Functions

This chapter explains setting of LAN advanced functions using the utility of the Compute Blade 2000/320 LAN adapter.

☐ Details of LAN advanced function

Details of LAN advanced function

For Compute Blade 2000 (all models):

See Appendix in "Hitachi Compute Blade 2000 SOFTWARE GUIDE".

For Compute Blade 320:

See Appendix in "Hitachi Compute Blade 320 SOFTWARE GUIDE".

6

Specification

T his chapter describes the basic specification of the 10Gb 2-port LAN adapter.

- Basic Specification

Basic Specification

Item	Specification	Notes
Product Code	GVX-CN2NXG2X1(BX) GVX-CN2DXG2X1(EX) GV-CN2NXG2X1-Y GV-CN2NXG2XR-Y GV-CN2DXG2X1-Y GGX-CN9PXG1X1(EX) GG-CN9PXG1X1-Y	
LAN Controller	Intel 82599	
Vender ID	8086	
Device ID	10FB	
SubSystem ID	000C	
SubVender ID	8086	
PCI I/F	PCI Express 2.0	
Lane Speed	5GT/s or 2.5GT/s	
Number of Lane	4-Lane PCI Express and 8-Lane PCI Express	
Connect Type	PCI Express x8	
PCI Slot Type	PCI Express x8, x16	
LAN I/F	IEEE 802.3ae :10GBASE-SR IEEE 802.1as :TimingandSynchronization IEEE 802.1ae:MACsecurity	
Speed	10Gbps	send and receive
Number of Port	2port	
Connecter Type	LC	
Cable Type	Multi Mode Fibre(GI50 10G)	
Cable	300m	Maximum
LED	ACT/LNK, 1GbE/10GbE	2 each
Wake On LAN PXE Boot	Not supported	Not allow to use the function because it has been supported on onboard LAN already.
Applying Standard	VCCI,FCC (Class B) UL,CE,BSMI,CTICK,KCC	
Operating Temperature	0C ~ 55C	
Operating Humidity	0% ~ 80%	Not condensing
Storage Temperature	-40 C ~ 70 C	Not in operation.
Strage Humidity	0% ~ 90%	Not in operation., not condensing
Power Supply	3.3V, 12V	Supplied from the system equipment..
Consumption Current	900mA(12V), 20mA(3.3V)	
Dimension	L 5.73 Inch(14.55cm)	Excluding the bracket
RoHS Compliance	In compliance with RoHS regulation	

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MK-99COM035-03